

A NEW SPECIES OF *HULSTINA* FROM CALIFORNIA (GEOMETRIDAE: ENNOMINAE)

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ABSTRACT. A new geometrid species, *Hulstina nevadaria* (TL. Tom's Place, Mono County) is described, illustrated and compared to other members of the genus.

Additional key words: Mono County, Sierra Nevada, Ennominae.

In Rindge's (1970) revision of *Hulstina*, the species *Hulstina grossbecki* Rindge (Geometridae) was described from specimens from coastal southern California and northern Baja California, Mexico. The validity of one specimen from Tom's Place, Mono County, California, on the lower eastern slope of the Sierra Nevada was questioned. Additional specimens from this locality were found, and, after further study, it was determined that these moths represent an undescribed species which is described below.

Hulstina nevadaria R. M. Brown, new species

Description. *Male* (Fig. 1): head with tan and dark brown scales; front flat with tufts of horizontal scales ventrally; palpi porrect from middle of eye, extending beyond front by width of eye; tongue well developed; antennae pectinations from anterior half of segment, longest pectinations 1.1 mm long, covered ventrally by fine setae, terminal few segments without pectinations. Thorax dorsally tan with scattered dark brown scales, ventrally with less dark brown scaling; collar with dark brown band; legs with scattered dark brown scales, metathoracic legs with tibia slightly swollen; abdomen concolorous with thorax, dorsally with paired brown connected spots at the posterior margin of segment. Forewing length 13–15 mm ($n = 4$); upper surface with ground color whitish, dusted with dark brown scales; transverse lines dark brown; basal area white; antemedial line tending to be geminate, prominent posterior of median vein; postmedial prominent posterior of vein cu_2 , remainder of postmedial line represented by spots on veins; median area varies in width and color intensity, darkest posterior of median vein; medial line weakly represented; postmedial with tan shadow line followed by white line; subterminal line scalloped with inward pointing streaks; white streak on cu_2 loosely united with white postmedial



FIG. 1. Male of *Hulstina nevadaria*, upper surface. FIG. 2. Female of *Hulstina nevadaria*, upper surface.

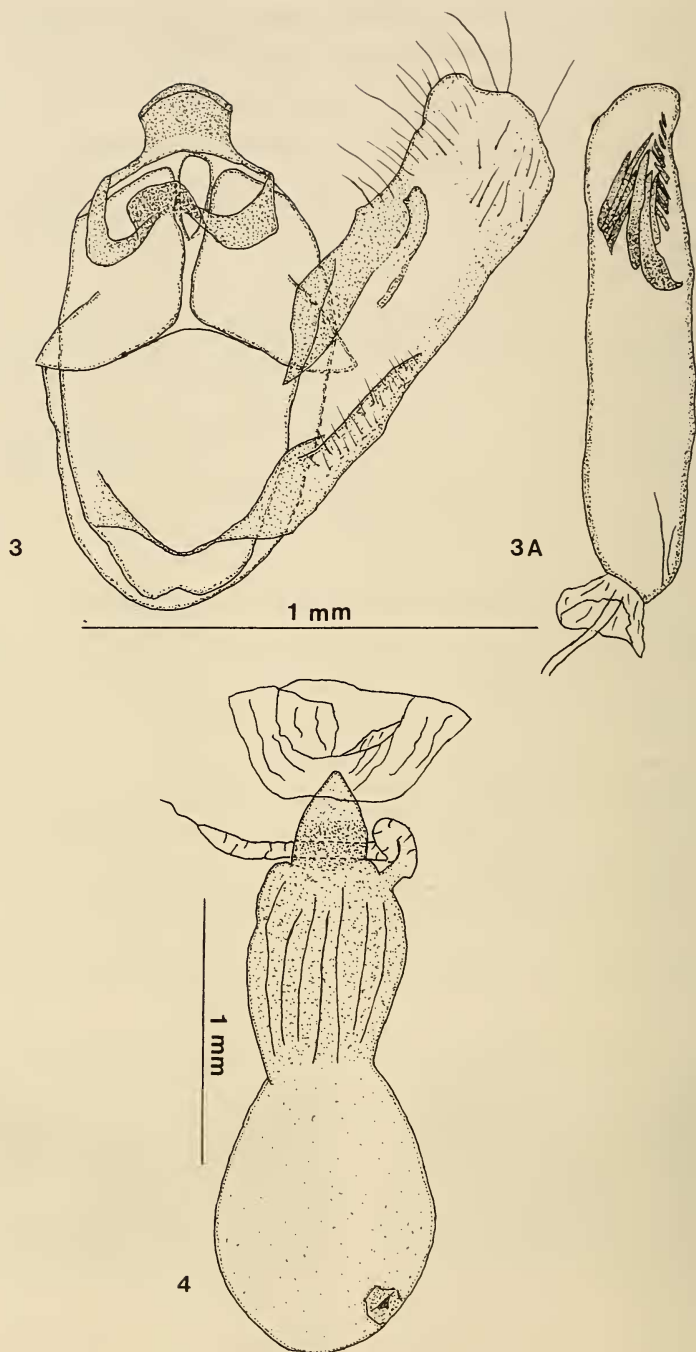


FIG. 3 and 3A. Male genitalia of *Hulstina nevadaria*. FIG. 4. Female genitalia of *Hulstina nevadaria*.

shadow line forming an irregular loop; discal area, a smooth blend of light and dark scales, discal spot brown; subterminal area tending to be darker than remainder of wing; veins lined by light tan; terminal line dark brown; fringe white at base, double rowed, dark brown checked at veins. Hindwing color lighter than forewing; lines weakly represented except at anal margin; terminal line and fringe as on forewing. Under surface of forewing brownish; costa speckled; postmedial line originating as a large brown spot on costa, then represented by spots on veins; discal spot brown. Hindwing whitish brown with postmedial line as on forewing; terminal line and fringe as on upper surface. *Female* (Fig. 2): similar to male, maculation less distinct; forewing length 13–14 mm ($n = 2$). *Male genitalia* (Fig. 3): uncus wide, posterior margin rounded; gnathos without median enlargement, median area finely spiculate; valve with costa well sclerotized to one-half of costal margin, with raised truncated process curved toward costa, arising from inner margin, sacculus swollen, lightly sclerotized, valve with distal margin broadly truncated; aedeagus 1.2 mm long, 0.3 mm at widest point, bluntly rounded at posterior end; vesica with two adjacent groups of cornuti in posterior half, cornuti on right side are fewer in number and tend to be longer than those on left. *Female genitalia* (Fig. 4): ductus bursae small, wider than long, anterior margin well defined, with a slight convex bend, posterior margin ill defined by scattered sclerotized spots, with lightly sclerotized triangular piece projecting posteriorly; ductus seminalis arising on right side of corpus bursae near ductus bursae, twisting and wrapping ventrally around ductus bursae; corpus bursae constructed roughly in middle, posterior half lightly sclerotized, somewhat rugose longitudinally, wider than ductus bursae; anterior half subglobular, membranous and wider than posterior portion; signum small, variable in shape and number of marginal points.

Types. Holotype (Fig. 1) ♂: California, Mono Co., 1 mile west Tom's Place, 13-VIII-57 (J. Powell), genitalia slide R. M. Brown no. 745. Allotype (Fig. 2) ♀: same data as holotype, genitalia slide R. M. Brown no. 746. Paratypes: 2 ♂, 1 ♀ same data as holotype, 1 ♂ same locality, 6-VIII-59 (C. D. MacNeill). The holotype, allotype and three paratypes will be in the Essig Museum of Entomology, University of California, Berkeley, California. One paratype is retained in my collection.

Diagnosis. *Hulstina nevadaria* belongs to Group II as defined by Rindge (1970). The lack of a spine extending across the face of the valve, the truncated distal margin of the valve and locality will separate *H. nevadaria* from the other species in Group II. *Hulstina aridata* Barnes & Benjamin of Group I flies with *H. nevadaria*, the two species can be confused based on maculation. However, *H. aridata* lacks a tongue and the upper forewing generally has a white area at the base of the subterminal line; in *H. nevadaria* this white area is greatly reduced or lacking. Generally *H. nevadaria* is more brownish than *H. aridata*, which tends to be gray.

Etymology. This species is named for the Sierra Nevada mountain range.

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LITERATURE CITED

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